AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 3-7, 21, 30-31, and 33, and cancel Claims 2, 29, and 34 as follows, without prejudice or disclaimer to continued examination on the merits:

1. (Currently Amended): A method for reconfiguring a switch element having a plurality of ingress devices operatively connected to ingress data lines, a plurality of egress devices operatively connected to egress data lines, and a plurality of center stage devices operatively interconnecting the ingress devices and the egress devices, the method comprising:

establishing an initial configuration for a plurality of connections between the ingress data lines and the egress data lines;

detecting a switching event that affects at least one of the plurality of connections;

selecting a portion of the plurality of connections, including one or more connections across at least one of the center stage devices; and

rearranging only the selected connections across at least one of the center stage devices in response to the switching event;

wherein said establishing step establishes an initial configuration for a subset of connections that is a subset of a plurality of connections between the ingress data lines and the egress data lines, the step of establishing including:

identifying the subset of connections to be initially configured including specifically leaving available at least one port of the center stage device in the initial configuration;

executing a control algorithm to determine the initial configuration for the switch element including the subset of connections; and

performing a post-processing step to complete the plurality of connections.

2. (Canceled).

3. (Currently Amended): The method according to claim 1 ~~claim 2~~, said post-processing step operable to configure the at least one previously empty port including

copying cross-connects created using the control algorithm in a port to the previously empty port and adding or deleting any required cross connects in the center stage devices.

4. (Currently Amended): The method of claim 1 ~~claim 2~~, wherein said establishing step includes creating portions of connections that are subsequently completed in said rearranging step.

5. (Currently Amended): The method of claim 1 ~~claim 2~~, wherein said establishing step includes creating portions of connections that are subsequently completed in said post-processing step.

6. (Currently Amended): The method of claim 1 ~~claim 2~~, wherein the control algorithm is selected from Paull's Algorithm and the Looping Algorithm.

7. (Currently Amended): The method of claim 1 ~~claim 2~~, wherein the step of post-processing includes a center copy operation.

8. (Original): The method of claim 1, wherein the switch element is a three stage Clos network, and wherein the step of post-processing includes adding cross-connects in the center stage device of the three stage Clos network.

9. (Original): The method of claim 8, wherein the step of adding cross connects includes adding a mirror copy of cross connects for another port.

10. (Original): The method of claim 1, wherein said post-processing step includes deleting cross connects.

11. (Original): The method of claim 1, wherein said post-processing step does not include executing the control algorithm.

12. (Original): The method of claim 1 wherein the step of selecting a portion includes identifying connections set-up in post processing that are associated with a predefined switch event.

13. (Original): The method of claim 1 wherein the step of rearranging includes rearranging connections including adding or deleting connections to complete identified passthrough connections.

14. (Original): The method of claim 1, further comprising:

mapping the initial configuration to a physical switch element to implement the configuration.

15. (Original): A method for switching connections across a switch element, the switch element configured as node in a ring network and operable to drop data from one port to a drop port and add data from the drop port to a second port of the switch element, the switch element including one or more ingress devices connected to the first port, one or more egress devices connected to the second port, and a set of center stage devices connected there between, the method comprising:

configuring the switch element to connect multiple ingress devices in the set of ingress devices to multiple egress devices in the set of egress devices across a first center stage device in the set of center stage devices, the configuring step including

identifying a subset of the plurality of connections to be configured using a control algorithm including specifically leaving empty at least one port,

executing a control algorithm to determine an initial configuration for the switch element including creating the subset of connections and a pre-defined mapping of connections from each ingress device and egress device to the center stage devices; and

performing a post-processing step to complete the plurality of connections, the post-processing step operable to configure the previously empty port including copying cross-connects created using the control algorithm in a port to the

previously empty port and adding and deleting any required cross connects in the center switches.

16. (Original): The method of claim 15, in response to detecting a switching event

selecting from the first center stage device to connect a new ingress device to one of the multiple egress device connected to the first center stage device;

selecting from the first center stage device to connect a new egress device to one of the multiple ingress devices connected to the first center stage device; and

bridging from the first center stage device to connect a new egress device to one of the multiple ingress devices in the set of ingress devices.

17. (Original): The method of claim 15 wherein the step of executing a control algorithm to determine an initial configuration for the logical model including the subset of connections includes mapping the initial configuration to the physical switch element to implement the configuration.

18. (Original): A method for switching connections across a switch element, the switch element configured as node in a ring network and operable to drop data from one port to a drop port and add data from the drop port to a second port of the switch element, the switch element including a Clos network including ingress stages, center stages and egress stages, the method comprising:

identifying a set of connections to pass data among the ports;

configuring the switch element to create the connections including

identifying a subset of the connections to be configured using a control algorithm including specifically leaving empty at least one port;

executing a control algorithm to determine an initial configuration for the switch element including creating the subset of connections and a pre-defined mapping of connections from the ingress stage and egress stage to the center stage; and

performing a post-processing step to complete the plurality of connections, the post-processing step operable to configure the previously empty port including

copying cross-connects created using the control algorithm in a port to the previously empty port and adding and deleting any required cross connects in the center switches.

19. (Original): A method for switching connections across a switch element, the switch element configured as node in a ring network and operable to drop data from one port to a drop port and add data from the drop port to a second port of the switch element, the switch element including a Clos network including ingress, center and egress stages, the method comprising:

identifying a set of connections to pass data among the ports;

configuring the switch element to create the connections including

identifying a subset of the connections to be configured using a control algorithm including specifically leaving empty at least one port;

executing a control algorithm to determine an initial configuration for the switch element including creating the subset of connections and a pre-defined mapping of connections from the ingress stage and egress stage to the center stage; and

performing a post-processing step to complete the plurality of connections without executing the control algorithm, the post-processing step operable to configure the previously empty port.

20. (Original): The method of claim 19, further comprising:

detecting a switching event and rearranging only select parts of the logical center stage devices in response to the switching event,

wherein the rearrangements may provide for either selecting the center stage device to receive communications from a new ingress stage switching device, or bridging/multi-casting communications on the logical center stage switching device from one egress stage switching device to one or more other egress stage switching devices.

21. (Currently Amended): A switch element, comprising:

ingress devices operatively and respectively connected to ingress data lines, each of said ingress devices including an input sorter and input routers;

egress devices operatively and respectively connected to egress data lines, each of said egress devices including output routers and an output sorter; and

center stage devices operatively and selectively interconnecting said ingress devices and said egress devices;

wherein the input sorter associated with each of said ingress devices operatively connects a respective one of the ingress data lines to a plurality of the input routers,

wherein the output sorter associated with each of the egress devices operatively connects a respective one of the egress data lines to a plurality of the output routers,

wherein the input routers operatively and selectively interconnect one of the ingress data lines with a respective input port of said center stage devices, ~~and~~

wherein the output routers operatively and selectively interconnect one of the egress data lines with a respective output port of said center stage devices; and

wherein the center stage devices are logical center stage switches modeling physical center stage switch devices to expand a number of edges and decrease a number of time slots per edge with respect to the physical center stage switch,

wherein edges correspond to links between said ingress devices and said center stage devices and links between said center stages devices and said egress devices.

22. (Original): The switch element according to claim 21, wherein the input routers, center stage devices and output routers form a Clos network.

23. (Original): The switch element according to claim 21, wherein each ingress router receives data from only one ingress data line and wherein each egress router forwards data to only one egress data line.

24. (Original): The switch element according to claim 23, wherein one or more of the ingress routers receive data from the same ingress data line

25. (Original): The switch element according to claim 23, wherein one or more of the egress routers forward data to the same egress data line

26. (Original): The switch element according to claim 21, wherein the input and output sorters allow switching across a subset of the input and output routers.

27. (Original): The switch element according to claim 21,

wherein the center stage devices are physical center stage switches being modeled as logical center stage switch devices to expand a number of edges and reduce a number of time slots per edge with respect to the physical center stage switch, and

wherein edges correspond to links between said ingress devices and said center stage devices and links between said center stages devices and said egress devices.

28. (Original): The switch element according to claim 27,

wherein each of the logical center stage devices has one time slot per edge.

29. (Canceled).

30. (Currently Amended): The switch element according to claim 21 ~~claim 29~~,

wherein the physical center stage switch has 32 physical edges and 16 time slots per edge and the logical center stage device has 512 edges and one time slot per edge.

31. (Currently Amended): The switch element according to claim 21 ~~claim 29~~,

wherein the input and output sorters are partitioned such that each partition of the sorters handles a set of connections with an associated one of the routers and such that no connection may cross a partition line.

32. (Original): The switch element according to claim 21, further comprising:

a switch control module for controlling the switch element.

33. (Currently Amended): A method for configuring a switch element having ingress devices, egress devices and center stage devices operatively interconnecting the ingress and egress devices, comprising:

partitioning the switch element into a logical model including input routers and output routers partitioned within the ingress and egress devices, respectively, wherein each of the partitioned routers within the logical model is assigned to only one data line;

determining a subset of excluded connections in an initial configuration of the switch element;

executing a control algorithm for the connections not present in the subset to establish the initial configuration of the switch element, wherein the subset of excluded connections is excluded from consideration during execution of the control algorithm to establish the initial configuration; and

post-processing the subset of excluded connections;

wherein the subset of excluded connections determined by said determining step includes the point-to-multipoint connections and said post processing step post-processes the non-point-to-point connections,

said executing step executing the control algorithm for point-to-point connections.

34. (Canceled).

35. (Original): The method according to claim 33,

wherein the subset of excluded connections determined by said determining step includes protection connections and said post processing step post-processes the protection connections,

said executing step executing the control algorithm for working connections.

36. (Original): The method according to claim 33, further comprising:

processing protection events in switch element without invoking a rearrangement algorithm.

37. (Original): The method according to claim 33, said partitioning step:

establishing a partitioning of the switch element into a logical model which allows arbitrary line level multicast;

establishing a partitioning of the switch element into a logical model that allows processing of line level protection such that only the lines affected by a protection event require processing; and

allowing an association between lines or portions of lines to allow arbitrary path level multicast within that association and allowing processing of protection events on those paths to be completed without affecting other paths in the switch element.

38. (Original): The method according to claim 33, further comprising:

updating connections for a protection event in an active bank for fast protection event processing without adversely affecting other connections in the switch element.